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EXAMINER

CAVALLARI, DANIEL J

ART UNIT

PAPER NUMBER

2836

DATE MAILED: 11/01/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/692,580	JACOBSON ET AL.	
	Examiner	Art Unit	
	Daniel J. Cavallari	2836	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 August 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-35 is/are pending in the application.
- 4a) Of the above claim(s) 34 and 35 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-33 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 04 August 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>8/4/06</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Information Disclosure Statement

The information disclosure statement (IDS) submitted on 8/4/2006 is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

Election/Restrictions

Newly submitted claims 34 & 35 are directed to an invention that is independent or distinct from the invention originally claimed for the following reasons stated below. Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claims 34 & 35 are withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

Restriction to one of the following inventions is required under 35 U.S.C. 121:

- I. Claims 1-33, drawn to a power supply bus system, classified in class 307, subclass 80.
- II. Claims 34-35, drawn to a method of time sharing, classified in class 700, subclass 22.

The inventions are distinct, each from the other because of the following reasons:

Inventions I and II are related as process and apparatus for its practice. The inventions are distinct if it can be shown that either: (1) the process as claimed can be practiced by another and materially different apparatus or by hand, or (2) the apparatus as claimed can be used to practice another and materially different process. (MPEP § 806.05(e)). In this case the power system of group I does not require the particular time sharing method set forth in group II and could be operated any manner of ways as commonly known in the art. The method of time sharing of group II does not require the particular apparatus set forth in group I and could be used on various power system which incorporates a plurality of regulated power sources feeding a bus and a plurality of loads.

Because these inventions are independent or distinct for the reasons given above and there would be a serious burden on the examiner if restriction is not required because the inventions have acquired a separate status in the art in view of their different classification, restriction for examination purposes as indicated is proper.

Response to Arguments

Applicant's arguments filed 8/4/2006 in regards to claims 1-14 have been fully considered but they are not persuasive.

The applicant argues that neither Hart nor Cole describe or suggest "...a power source regulated bus adapted to connect in a mesh topology to a plurality of subsystems;... a controller having a plurality of output and capable to provide a time-

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shared mode of operation to provide power sequentially to one or more of the plurality of subsystems”.

The examiner points out that the terminology of “adapted to” and “capable to” does not positively limit the claims since it has been held that the recitation that an element is “adapted to” or “capable of” performing a function is not a positive limitation but only requires the ability to so perform. It does not constitute a limitation in any patentable sense. *In re Hutchinson*, 69 USPQ 138.

The examiner would like to further point out that the power system of Siewert does provide the capability to be connected in a “mesh topology” wherein multiple power supplies (1-N), busses (SPSS) or loads (1 to M) (See Figure 12) can be connected. Furthermore, the controller taught by Hart is a remote computer capable of numerous operating schemes including time-shared operation.

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claim 33 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Claim 33 recites "... a second interconnect with $k*(k-1)/2$ sets of power connections connecting every one of k said power system subsystems..." however the specification fails to disclose the equation of $k*(k-1)/2$ sets of power connections.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1, 7, 15, 18, 19, & 33 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In regard to Claims 1, 7, 15, 18, & 19

The term "mesh topology" although used in the optical filed, is not a common term used in the power systems art and therefore it is unclear what constitutes a "mesh topology". The term will be examined as best understood to mean and interconnection to multiple subsystems.

In regard to Claim 33

The limitations of "...a plurality of k power system components, where k is an integer equal to or greater than one..." is unclear as it is unclear how there can be a plurality of k power systems wherein k is equal to 1. The claim will be examined as best understood to mean a "a number of k power system subsystem components, where k is an integer equal to or greater than one..."

The claim is further rejected in view of the limitation of "...a second interconnect with $k(k-1)/2$ sets of power connection connecting every one of k said power system subsystem components to all other said power system components..." wherein "k" has been defined as an integer equal to or greater than one however when k is 1, the equation produces "0" power connections however further states "said sets of connections further comprising E connections to subsystem energy storage elements where E is an integer equal to or greater than one" however if there are zero sets of connections it is impossible to have the nonexistent connection comprising connections to other components. The claims will be examined as best understood in which if no second interconnect is present, there are no connections between the second interconnect and the subsystem regulated bus, subsystem power sources, and subsystem energy storage elements.

The claim is further rejected in view of the limitation of "...said sets of connections..." as a "first" and "second" interconnect with "sets of connections" have been disclosed making it unclear whether the "first" or "second" set is being referenced.

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The claim will be examined as best understood to be referring to the set disclosed in the paragraph it is being referenced in.

Claim 33 recites the limitation "said common power source subsystem component" however a "power source subsystem component" is not previously disclosed. There is insufficient antecedent basis for this limitation in the claim. The examiner notes that a "common power source component" is disclosed therefore the claim will be interpreted to be referencing said "common power source component".

Appropriate action is required.

Claim Rejections - 35 USC § 102

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim 33 is rejected under 35 U.S.C. 102(b) as being anticipated by Siewert et al. (US 5,892,299).

Siewert et al. teach:

- At least one common power source component (200) (See Figure 12).
- One power system subsystem component (k) read on by component (PEES 1) connected to common power sources (200) (See Figure 12).
- A first interconnect (400) with k=1 set of power connections connecting all k=1 said power system subsystem components (PEES 1) and said power source component (200) wherein the sets, k=1 of connection comprises Ro connections

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(wherein $R_o=1$) to subsystem regulated buses (1210) and U connections (wherein $U=1$) to unregulated buses (1220) of said power system subsystem components (See Figure 12).

- A second interconnect (500) with $k^*(k-1)/2$ (wherein $k=1$ and therefore the second interconnect has zero sets of power connections) no connections between the second interconnect and the subsystem regulated bus, subsystem power sources, and subsystem energy storage element (E) (See Figure 3A, component (380), labeled "internal DC" which is described in the specification as comprising a battery (See Column 4, Line 62 to Column 5, line 7).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Siewert et al. (US 5,892,299), Hart (US 6,236,949), and Cole et al. (US 2,135,250).

Siewert et al. (hereinafter referred to as Siewert) teaches a power system common power source subsystem comprising:

- A power source unregulated bus, read on by SPSS power bus (1210) (See Figure 12)

- A power source regulated bus, read on by bus 1220 (See Figure 11) as regulated by regulator (400) (See Figure 12 & Column 11, Lines 23-58)
- At least one power source (200) having an output to converter (330) (See Figure 12)
- A first group comprising a switch (260) of component (230) coupling the power source (200) to the unregulated bus (See Figure 2 and Column 4, Line 52 to Column 5, Line 21)
- At least one regulator, read on by regulator power conditioner (400) (See Figure 12) having an input from bus (1210) and an output to the regulated bus (1020).
An embodiment of the power conditioner (400) taught incorporating a regulator (440) (See Figure 4 & Column 7, Lines 26-35).
- A second group comprising a switch (500) coupling an input of the regulator (400)
- At least two power system subsystem component, read on by the branch N and subgroups 1-J & M-K (See Figure 12 & Column 10, Line 27-46 & Column 11, Lines 23-34) in which all of the subsystem components are present that are present in the main system [The examiner notes that Siewert teaches N which is representative of any number therefore reads on two or more].

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Siewert fails to teach:

- A second group comprising a switch located between the regulator input and the unregulated bus and a third group comprising a switch located between the regulator output and the regulated bus.
- A controller coupled with the first, second, and third group of switches as well as coupled to a sensor.

Siewert discloses a switch (500) located between a power conditioner and the power bus (1210), the power bus connected to the power conditioner (400) (Regulator) and a second switch (500) coupled to the power conditioner (400) via the bus (1220).

Siewert fails to teach switches coupled to the input and output of the regulator, thereby coupling the input and the output do to the unregulated bus (1210) and the regulated bus (1220).

Cole et al. (hereinafter referred to as Cole) teach a power supply system in which a regulator (27) is connected to an unregulated bus (20) via switch (23) and a regulated bus (22) through a second switch (28) (See Figure 1 & Page 3, Lines 34-67).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate switches between the regulator taught by Siewert between the regulator input and the unregulated bus and the regulator output and the regulated bus, as taught by Cole. The motivation would have been to provide a means to service the regulator (See Cole, Page 1, Lines 33-41).

Siewert teaches switches (i.e. 260) that can operate “automatically” (See column 5, Lines 8-21) as well as the isolation device (530) operating by a control means (See Column 8, Lines 3-18). Siewert further teaches sensors read on by feedback provided by the PEE DC bus used to control the power conditioners (400) (See Column 10, Lines 47-67) as well as a controller (1240) in which the sensors are connected via electrical lines (1215, 1225, 1205) (See Column 11, Lines 35-58).

Siewert fails to teach the controller coupled with the first, second, and third group of switches. Hart teaches switches, read on by the circuit breakers (44-47) all electrically connected via bus 7 to a controller, read on by a remote computer (See Figure 1 & Column 6, Line 26 to Column 7, Line 26 & Column 7 Lines 50-63).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate a connection between the controller, taught by Siewert, as well as the switches, also taught by Siewert, in the common fashion as taught by Hart in which a controller is attached to all the switches. The motivation would have been to provide an automated means of operating the switches in which Siewert is silent (See Siewert, Column 5, Lines 8-21)

Siewert further teaches:

In regard to Claims 2, 5, 9, 13, 20, 23, 26, & 30

- A stabilizer, read on by the source converter (300) (See Figure 12) which comprises a switch (328) and a DC/DC converter (326) as illustrated in component (324) (See Figure 3B & Column 6, Lines 53-64) and having an input

coupled to a power source (200) and an output with a forth group comprising of a switch (328) (See Figure 3B) coupling the stabilizer to the unregulated bus (1210) (See Figure 12).

In regard to Claims 3, 6, 10, 14, 21, 24, 27, & 31

- The power system further comprising at least one storage element, as shown in Figure 3A, component (380), labeled “internal DC” which is described in the specification as comprising a battery (See Column 4, Line 62 to Column 5, line 7) and the source converter (300) being coupled (including storage element) being coupled to the regulator (400) (See Figure 12) wherein the storage element is coupled to the regulated bus via a forth group comprising a switch (385).

In regard to Claims 4, 12, 22, & 29

- The power source (200) comprising a battery (See Figure 2, component 220 & Column 4, Line 62 to Column 5, line 7)

In regard to Claims 11 & 28

- A load, read on by the protected electrical equipment (PEE) (See Figure 12 & Column 3, lines 46-61) and a fifth group comprising at least one switch (500), as shown located between the load (110) and the regulated bus (1220) (See Figure 12)

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In regard to Claim 32

- At least one mode in which a single power source (1) (200) or another mode in which multiple power sources (N) are used to supply to the power system (See Column 10, lines 8-26).

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel J. Cavallari whose telephone number is (571)272-8541. The examiner can normally be reached on Monday-Friday 8:30-5:00.


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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Sircus can be reached on (571)272-2800 x36. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Daniel Cavallari

October 11, 2006



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